

REMARKS

Favorable reconsideration of this application is respectfully requested.

First, applicants note the outstanding rejection has clearly been prematurely made a Final rejection. Specifically, the outstanding rejection includes a *new rejection* to claim 5 that was not necessitated by any amendment in the previous response. Claim 5 now stands rejected under 35 U.S.C. § 112. Claim 5 was not previously amended and no other amendment changed claim 5 with respect to the rejection under 35 U.S.C. § 112, second paragraph. Submitting such a new rejection in a Final rejection is clearly *improper*.

Therefore, the finality of the previous Office Action must be withdrawn.

Claims 1-11 are pending in this application. Claim 5 was rejected under 35 U.S.C. § 112, second paragraph. Claims 1, 2, 6, 9, and 10 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. patent 5,894,156 to Terashima et al. (herein “Terashima”) in view of U.S. patent 6,376,891 to Nagatani et al. (herein “Nagatani”). Claims 3-5, 7, 8, and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Terashima in view of Nagatani as applied to claims 1 and 2, and further in view of U.S. patent 6,798,037 to Leonardi.

Addressing now the rejection of claim 5 under 35 U.S.C. § 112, second paragraph, that rejection is traversed by the present response.

With respect to the above rejection, the Office Action refers to a trench isolation structure 8b in Figure 16 as corresponding to the “second trench isolation structure” of claim 5. However, applicants note that recognition is improper. Though the trench isolation structure 8b is connected to a trench isolation structure 8a, the “second trench isolation structure” of claim 5 is not connected to the first trench isolation structure and is separated by a certain distance from the first trench isolation structure. That feature is now clarified in claim 2, from which Claim 5 depends. Trench isolation structures 8c and 8d in Figure 19 are not connected to the trench isolation structure 8a and are separated by a certain distance from

the trench isolation structure 8a. That is, the trench isolation structures 8c and 8d in Figure 19 support the “second trench isolation structure” of claim 5. As the trench isolation structures 80c and 80d include in-line portions 8dc and 8dd extending from a p impurity region 3 towards an n⁺ interior region 7, respectively, it is respectfully submitted that the recitation in claim 5 to the “second trench isolation structure...comprises an in-line portion which extends from said first impurity region towards said second impurity region” is clear.

Thus, claim 5 is believed to be proper under 35 U.S.C. § 112, second paragraph.

Addressing now the above-noted prior art rejections, the claims are believed to clearly distinguish over Terashima in view of Nagatani, and further in view of Leonardi.

The outstanding Office Action indicates that in Figure 12 of Terashima a trench including a rightmost p diffusion region 3 is disclosed and corresponds to the claimed “trench isolation structure”. Applicants traverse that position.

More specifically, an n⁻ epitaxial layer 2 and the p diffusion region 3 are only different in conductivity types of contained impurities, and the p⁺ diffusion region 3 cannot be a trench in an n⁻ epitaxial layer 2, and therefore the claimed “trench” is not at all disclosed in Terashima. In Terashima the p diffusion region 3, not a trench, separates different elements.

Further, the Office Action indicates that in Figure 1 of Nagatani a buried diffusion region 2 provided directly below the second diffusion region is disclosed. Nagatani does disclose the buried diffusion region 2 provided directly below diffusion regions 7 and 8 in a low breakdown voltage element region 17. However, in Nagatani the low breakdown voltage element 17 is not a RESURF isolation region, but only a high breakdown voltage isolation region 16 is a RESURF isolation region. Accordingly, it follows that Nagatani merely discloses the buried impurity region 2 provided directly below the diffusion regions 7 and 8

that are outside the RESURF isolation region, and applicants draw attention to Nagatani at column 9, line 53 to column 10, line 61.

On the other hand, in Figure 12 Terashima discloses an n diffusion region 5 next to a polysilicon gate 9 provided in a region of an nch RESURF MOSFET, i.e. in a RESURF isolation region. Accordingly, even if the buried diffusion region 2 in Nagatani was incorporated in the device of Terashima, the buried diffusion region 2 would be provided outside the region of the nch RESURF MOSFET and *not* directly below the n diffusion region 5.

In such ways, applicants respectfully submit that even if the teachings of Terashima and Nagatani were combined, it would not be possible to obtain the claimed buried impurity region provided directly below the second impurity region in the RESURF isolation region.

Thereby, the claims as currently written are believed to clearly distinguish over any combination of teachings of Terashima in view of Nagatani.

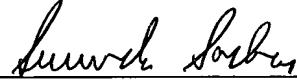
Moreover, no teachings in Leonardi were cited with respect to the above-noted features, nor are any teachings in Leonardi believed to cure the above-discussed deficiencies of Terashima in view of Nagatani.

In view of these foregoing comments, applicants respectfully submit the claims as currently written distinguish over the applied art.

As no other issues are pending in this application, it is respectfully submitted that the present application is now in condition for allowance, and it is hereby respectfully requested that this case be passed to issue.

Respectfully submitted,

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